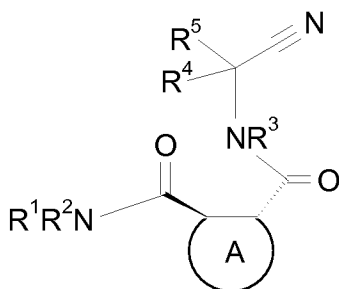


**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1. (Previously presented) A method of inhibiting Cathepsin S in a warm blooded animal comprising administering a compound of formula (I):



(I)

in which:

A is a 6-membered ring optionally containing a double bond and optionally containing an oxygen atom or NR group in the ring;

R is hydrogen or C<sub>1-6</sub> alkyl;

R<sup>1</sup> and R<sup>2</sup> are independently, C<sub>1-6</sub> alkyl or C<sub>3-6</sub> cycloalkyl both of which can optionally contain one or more O, S or NR<sup>3</sup> groups, or R<sup>1</sup> and R<sup>2</sup> together with the nitrogen atom to which they are attached form a 3,4-dihydroisoquinoline ring or a 5- or 6-membered saturated ring optionally containing a further O, S or N atom and optionally substituted by a group – (CH<sub>2</sub>)<sub>p</sub>-R<sup>6</sup> where p is 0 to 3 and R<sup>6</sup> is C<sub>1-6</sub> alkyl, CONR<sup>7</sup>R<sup>8</sup> where R<sup>7</sup> and R<sup>8</sup> are independently hydrogen, C<sub>1-6</sub> alkyl which can optionally contain one or more O, S or NR<sup>3</sup> groups, or together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated ring optionally containing a further O, S or NR<sup>3</sup> group;

or R<sup>6</sup> is a 4 to 7-membered saturated ring optionally containing one or more O, S or N atoms, or an aryl or heteroaryl group containing one to four heteroatoms selected from O, S or N, the saturated ring, aryl and heteroaryl groups all being optionally substituted by halogen, amino, hydroxy, cyano, nitro, carboxy, CONR<sup>7</sup>R<sup>8</sup>, SO<sub>2</sub>NR<sup>7</sup>R<sup>8</sup>, SO<sub>2</sub>R<sup>3</sup>,

trifluoromethyl,  $\text{NHSO}_2\text{R}^3$ ,  $\text{NHCOR}^3$ ,  $\text{C}_{1-6}$  alkyl,  $\text{C}_{1-6}$  alkoxy,  $\text{SR}^3$  or  $\text{NR}^9\text{R}^{10}$  where  $\text{R}^9$  and  $\text{R}^{10}$  are independently hydrogen,  $\text{C}_{1-6}$  alkyl or together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated ring optionally containing a further O, S or  $\text{NR}^3$  group;

$\text{R}^3$  is hydrogen or  $\text{C}_{1-6}$  alkyl;

$\text{R}^4$  is hydrogen or  $\text{C}_{1-6}$  alkyl;

$\text{R}^5$  is hydrogen,  $\text{C}_{1-6}$  alkyl or  $\text{C}_{3-6}$  cycloalkyl both of which can optionally contain one or more O, S or  $\text{NR}^3$  groups or  $\text{R}^5$  is aryl or a 5- or 6-membered heteroaryl group containing one or two heteroatoms selected from O, S or N, the aryl and heteroaryl groups all being optionally substituted by halogen, amino, hydroxy, cyano, nitro, carboxy,  $\text{CONR}^7\text{R}^8$ ,  $\text{SO}_2\text{NR}^7\text{R}^8$ ,  $\text{SO}_2\text{R}^3$ , trifluoromethyl,  $\text{NHSO}_2\text{R}^3$ ,  $\text{NHCOR}^3$ ,  $\text{C}_{1-6}$  alkyl,  $\text{C}_{1-6}$  alkoxy,  $\text{SR}^3$  or  $\text{NR}^9\text{R}^{10}$  where  $\text{R}^9$  and  $\text{R}^{10}$  are independently hydrogen,  $\text{C}_{1-6}$  alkyl or together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated ring optionally containing a further O, S or  $\text{NR}^3$  group;

or  $\text{R}^4$  and  $\text{R}^5$  together form a 5- or 6-membered saturated ring optionally containing a further O, S or  $\text{NR}^3$  group and optionally substituted by  $\text{C}_{1-6}$  alkyl;

and pharmaceutically acceptable salts or solvates thereof to a warm blooded animal.

Claim 2. (Previously presented) The method according to claim 1, wherein A is a cyclohexane ring.

Claim 3. (Previously presented) The method according to claim 1, wherein  $\text{R}^1$  and  $\text{R}^2$  together with the nitrogen atom to which they are attached form an unsubstituted morpholine ring or a piperidine ring substituted by a group  $-(\text{CH}_2)_p-\text{R}^6$  where p and  $\text{R}^6$  are as defined in claim 1.

Claim 4. (Previously presented) The method according to claim 1, wherein  $\text{R}^3$  is hydrogen.

Claim 5. (Previously presented) The method according to claim 1, wherein  $\text{R}^4$  is hydrogen.

Claim 6. (Previously presented) The method according to claim 1, wherein R<sup>5</sup> is hydrogen or phenyl optionally substituted by C<sub>1-6</sub> alkyl or C<sub>1-6</sub> alkoxy.

Claim 7. (Previously presented) The method according to claim 1, wherein the compound of formula (I) is selected from:

(1R,2R)-N-[Cyano(2-methoxyphenyl)methyl]-2-(morpholin-4-ylcarbonyl)cyclohexanecarboxamide,  
(1R,2R)-N-[Cyano(2-methoxyphenyl)methyl]-2-{[4-(4-fluorobenzyl)piperazin-1-yl]carbonyl}cyclohexane carboxamide,  
(1R,2R)-N-[Cyano(2-methoxyphenyl)methyl]-2-(3,4-dihydroisoquinolin-2(1H)-ylcarbonyl)cyclohexane carboxamide,  
(±) Trans-N-(cyanomethyl)-2-{[4-(4-fluorobenzyl)piperazin-1-yl]carbonyl}cyclohexanecarboxamide,  
(±) Trans-N-[cyano(2-methoxyphenyl)methyl]-2-[(4-methylpiperazin-1-yl)carbonyl]cyclohexanecarboxamide,  
(1R,2R)-N-[Cyano(2-methoxyphenyl)methyl]-2-{[4-(4-fluorophenyl)piperazin-1-yl]carbonyl}cyclohexane carboxamide,  
(1R,2R)-N-(4-Cyano-1-methylpiperidin-4-yl)-2-{[4-(4-fluorophenyl)piperazin-1-yl]carbonyl}cyclohexane carboxamide,  
and pharmaceutically acceptable salts thereof.

Claim 8. (cancelled)

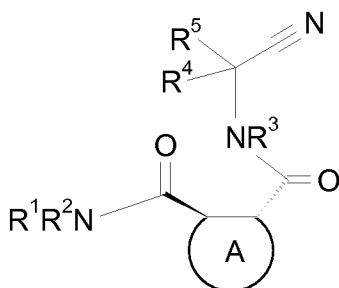
Claim 9. (Withdrawn) A pharmaceutical composition comprising a compound of the formula (I) as defined in claim 1 or a pharmaceutically acceptable salt thereof and a pharmaceutically acceptable diluent or carrier.

Claim 10. (Withdrawn) A method for producing inhibition of a cysteine protease in a mammal, such as man, in need of such treatment, which comprises administering to said mammal an effective amount of a compound of as defined in claim 1, or a pharmaceutically acceptable salt thereof.

Claim 11. (Withdrawn) A method for producing inhibition of a cysteine protease in a mammal comprising administering to said mammal an effective amount of a compound as defined in claim 1, or a pharmaceutically acceptable salt thereof.

Claim 12. (Withdrawn) A method for treating pain in a mammal in need of such treatment, comprising administering to said mammal an effective amount of a compound as defined in claim 1, or a pharmaceutically acceptable salt thereof.

Claim 13. (new) A compound of formula (I):



(I)

in which:

A is a 6-membered ring optionally containing a double bond and optionally containing an oxygen atom or NR group in the ring;

R is hydrogen or  $C_{1-6}$  alkyl;

$R^1$  and  $R^2$  are independently,  $C_{1-6}$  alkyl or  $C_{3-6}$  cycloalkyl both of which can optionally contain one or more O, S or  $NR^3$  groups, or  $R^1$  and  $R^2$  together with the nitrogen atom to which they are attached form a 3,4-dihydroisoquinoline ring or a 5- or 6-membered saturated ring optionally containing a further O, S or N atom and optionally substituted by a group  $-(CH_2)_p-R^6$  where p is 0 to 3 and  $R^6$  is  $C_{1-6}$  alkyl,  $CONR^7R^8$  where  $R^7$  and  $R^8$  are independently hydrogen,  $C_{1-6}$  alkyl which can optionally contain one or more O, S or  $NR^3$  groups, or together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated ring optionally containing a further O, S or  $NR^3$  group;

or R<sup>6</sup> is a 4 to 7-membered saturated ring optionally containing one or more O, S or N atoms, or an aryl or heteroaryl group containing one to four heteroatoms selected from O, S or N, the saturated ring, aryl and heteroaryl groups all being optionally substituted by halogen, amino, hydroxy, cyano, nitro, carboxy, CONR<sup>7</sup>R<sup>8</sup>, SO<sub>2</sub>NR<sup>7</sup>R<sup>8</sup>, SO<sub>2</sub>R<sup>3</sup>, trifluoromethyl, NHSO<sub>2</sub>R<sup>3</sup>, NHCOR<sup>3</sup>, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, SR<sup>3</sup> or NR<sup>9</sup>R<sup>10</sup> where R<sup>9</sup> and R<sup>10</sup> are independently hydrogen, C<sub>1-6</sub> alkyl or together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated ring optionally containing a further O, S or NR<sup>3</sup> group;

R<sup>3</sup> is hydrogen or C<sub>1-6</sub> alkyl;

R<sup>4</sup> is hydrogen or C<sub>1-6</sub> alkyl;

R<sup>5</sup> is hydrogen, C<sub>1-6</sub> alkyl or C<sub>3-6</sub> cycloalkyl both of which can optionally contain one or more O, S or NR<sup>3</sup> groups or R<sup>5</sup> is aryl or a 5- or 6-membered heteroaryl group containing one or two heteroatoms selected from O, S or N, the aryl and heteroaryl groups all being optionally substituted by halogen, amino, hydroxy, cyano, nitro, carboxy, CONR<sup>7</sup>R<sup>8</sup>, SO<sub>2</sub>NR<sup>7</sup>R<sup>8</sup>, SO<sub>2</sub>R<sup>3</sup>, trifluoromethyl, NHSO<sub>2</sub>R<sup>3</sup>, NHCOR<sup>3</sup>, C<sub>1-6</sub> alkyl, C<sub>1-6</sub> alkoxy, SR<sup>3</sup> or NR<sup>9</sup>R<sup>10</sup> where R<sup>9</sup> and R<sup>10</sup> are independently hydrogen, C<sub>1-6</sub> alkyl or together with the nitrogen atom to which they are attached form a 5- or 6-membered saturated ring optionally containing a further O, S or NR<sup>3</sup> group;

or R<sup>4</sup> and R<sup>5</sup> together form a 5- or 6-membered saturated ring optionally containing a further O, S or NR<sup>3</sup> group and optionally substituted by , C<sub>1-6</sub> alkyl;

or pharmaceutically acceptable salts or solvates thereof.

Claim 14. (new)      The compound according to claim 13, wherein A is a cyclohexane ring.

Claim 15. (new)      The compound according to claim 13, wherein R<sup>1</sup> and R<sup>2</sup> together with the nitrogen atom to which they are attached form an unsubstituted morpholine ring or a piperidine ring substituted by a group -(CH<sub>2</sub>)<sub>p</sub>-R<sup>6</sup> where p and R<sup>6</sup> are as defined in claim 1.

Claim 16. (new)      The compound according to claim 13, wherein R<sup>3</sup> is hydrogen.

Claim 17. (new)      The compound according to claim 13, wherein R<sup>4</sup> is hydrogen.

Claim 18. (new) The compound according to claim 13, wherein R<sup>5</sup> is hydrogen or phenyl optionally substituted by C<sub>1-6</sub> alkyl or C<sub>1-6</sub> alkoxy.

Claim 19. (new) The compound according to claim 13, wherein the compound of formula (I) is selected from:

(1R,2R)-N-[Cyano(2-methoxyphenyl)methyl]-2-(morpholin-4-ylcarbonyl)cyclohexanecarboxamide,

(1R,2R)-N-[Cyano(2-methoxyphenyl)methyl]-2-{[4-(4-fluorobenzyl)piperazin-1-yl]carbonyl}cyclohexane carboxamide,

(1R,2R)-N-[Cyano(2-methoxyphenyl)methyl]-2-(3,4-dihydroisoquinolin-2(1H)-ylcarbonyl)cyclohexane carboxamide,

(±) Trans-N-(cyanomethyl)-2-{[4-(4-fluorobenzyl)piperazin-1-yl]carbonyl}cyclohexanecarboxamide,

(±) Trans-N-[cyano(2-methoxyphenyl)methyl]-2-[(4-methylpiperazin-1-yl)carbonyl]cyclohexanecarboxamide,

(1R,2R)-N-[Cyano(2-methoxyphenyl)methyl]-2-{[4-(4-fluorophenyl)piperazin-1-yl]carbonyl}cyclohexane carboxamide,

(1R,2R)-N-(4-Cyano-1-methylpiperidin-4-yl)-2-{[4-(4-fluorophenyl)piperazin-1-yl]carbonyl}cyclohexane carboxamide,

and pharmaceutically acceptable salts thereof.